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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/364,241	07/29/1999	ROBERT P. PARKER	02103/349001	9138

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EXAMINER

TRAN, KHANH C

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 08/18/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/364,241

Applicant(s)

ROBERT P. PARKER

Examiner

Khanh Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The Response C filed on 07/07/2003 has been entered. Claims 1-15 are pending in this Office action.

Response to Arguments

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

3. However, Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1, 4-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Imazeki U.S. Patent 4,245,348.

Regarding claim 1, figure 2 of illustrates a scanning receiver embodiment of Imazeki invention comprising a variable tuning means in the form of an antenna 12, RF amplifier 14, mixer and filter circuitry 16, a local oscillator 17, an IF amplifier 18 for selectively and sequentially tuning the receiver to pre-determined frequencies within a

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range of frequencies and producing a corresponding IF frequency. The scanning receiver in figure 2 further shows frequency discriminator means provided in the form of an FM audio detector 20 which is coupled to the IF amplifier 18 and tuned to a pre-determined frequency such as 10.7 Mhz. The scanning receiver in figure 2 also provides a scanner circuitry 40 between the switching circuit 23, which is responsive to the gating signal developed by center frequency detector 30, and local oscillator 17 for causing the variable tuning means to automatically and sequentially tune the receiver to each of desired frequencies and stop when it has tuned to the center frequency of a received frequency. The center frequency detector 30 is coupled to the audio detector 20 and is responsive to the DC signal component developed by audio detector 20 for developing a gating signal. Figure 3 shows the center frequency detector 30 in greater detail wherein the center frequency detector 30 includes a pair of voltage comparators 31 and 32. By selecting the upper and lower threshold values to be very close to each other, hence, that corresponds to the center frequency of the desired received signal. From the foregoing discussion, the antenna 12 receives a radio-frequency signal within a pre-determined range of reception frequencies (e.g. FM reception). The center frequency detector 30 performs the step of comparing frequency of the received signal to a pre-determined frequency threshold. Finally, the scanner circuitry 40 tunes the frequency of the local oscillator 17 very close to the frequency threshold when the received frequency is below or above the threshold frequency.

Regarding claim 4, the step of tuning to the frequency threshold as discussed in claim 1 above inherently performs adding or subtracting an offset value when the received frequency is less than or more than the threshold frequency.

Regarding claim 5, selecting the same magnitude for both frequency offsets is inherently a design choice (e.g. same increment/decrement intervals).

Regarding claim 6, in one example, Imazeki discloses predetermined IF frequency is 10.7 MHz for FM frequency range. It's notoriously known that FM frequency bandwidth is 20 MHz (from 88 MHz to 108 MHz), evidently, 10.7 MHz is approximately is the center frequency of FM range. Hence, any frequency offset below or above 10.7 MHz must be less than or equal to the center frequency.

Regarding claim 7, when the received frequency is at either end of the frequency range, both offsets values are equal to center IF frequency when the receiver is tuned to the center of the reception frequency range.

Regarding claim 8, in addition to the rejection argument of claim 1, Imazeki discloses in the invention that the predetermined IF frequency is 10.7 MHz for FM frequency range, which is mid-point frequency of FM frequency range.

Regarding claim 9, in addition to the rejection argument of claim 1, Imazeki gave two examples in the invention wherein the pre-determined frequencies are 10.7 MHz for FM receiver and 455 Khz that falls into AM frequency range. Hence, Imazeki receiver could be easily configured to receive signals in the range of 2400 Hz to 2485 Hz.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imazeki U.S. Patent 4,245,348.

Regarding claim 2, in addition to the rejection argument of claim 1, Imazeki further teaches that in applications of the invention utilizing frequency-synthesizer circuitry where the tuning frequency is adjusted in discrete increments, the range of pre-selected upper and lower threshold values as discussed in claim 1 should not be made narrower than the increments in order to avoid the possibility of skipping over the desired center frequency. Although, Imazeki teachings do not explicitly convert the desired received signal frequency into a discrete value (index value as claimed), however, it would have been obvious to one of ordinary skills in the art that such step is necessary in the foregoing applications where the tuning frequency is adjusted in discrete increments.

Regarding claim 3, as recited in claim 2, in applications of the invention utilizing frequency-synthesizer circuitry where the tuning frequency is adjusted in discrete increments, the threshold frequency obviously represents a discrete value which

corresponds to the center frequency of one channel within said range of reception frequencies.

6. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imazeki U.S. Patent 4,245,348 in view of Hagiwara et al. U.S. Patent 4,270,220.

Regarding claims 10-11, as illustrated in figure 2, a radio-frequency receiver includes an antenna 12 for receiving an RF signal within a pre-determined frequency range, a local oscillator 17, a mixer and filter 16 coupled between the RF amplifier 14 and the local oscillator 17, and an IF amplifier 18 to sequentially and selectively tune the receiver to the pre-determined frequencies and produce a corresponding IF signal. The frequency control means in Imazeki invention is provided the form of FM audio detector 20, center-frequency detector 20, a switching circuit 23, and a scanner circuitry 40. The switching circuit 23 coupled to the scanner circuitry 40 and is responsive to the gating signal from the center-frequency detector 20 for stopping the scanning only when the control signal has a value that corresponds to the receiver being tuned close to the pre-determined frequency. From that view, the tuned frequency differs from the frequency of desired signal by an intermediate frequency. Obviously, the pre-determined frequencies are from a source of signals representative of frequencies of the desired signals. However, Imazeki does not show explicitly the source of signals coupled to the frequency control means in the invention. Nevertheless, Hagiwara et al. invention discloses the source of desired signals implemented as a channel selection input control circuit 8 in a television receiver, shown in figure 1 of a US Patent. Clearly, the

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tuning voltage control circuit 10 represents the frequency control means that is coupled to a local oscillator 5 and a channel selection input control circuit 8 to provide a frequency control signal to the local oscillator 5. As notoriously known in the art, the channel selection circuitry is always implemented in a radio-frequency tuning receiver, therefore, combining both teachings would have been obvious to one skilled in the art.

Regarding claim 12, as well known in the art, local oscillator is used in conjunction with a phase locked loop and both could be easily implemented as a single unit.

Regarding claim 13, in addition to the rejection argument of claim 11, Imazeki gave two examples in the invention wherein the pre-determined frequencies are 10.7 MHz for FM receiver and 455 Khz that falls into AM frequency range. Hence, Imazeki receiver could be easily configured to receive signals in the range of 2400 Hz to 2485 Hz.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. U.S. Patent 5,125,105.

Regarding claim 14, Kennedy et al. discloses in figure 4 an FM scan tuning receiver includes an antenna 40 for receiving a FM signal, a FM tuner providing a local oscillator 61 to the microprocessor controlled PLL scan tuning circuit 57, which provides tuning voltage 60 to the FM tuner 42. Obviously, the FM tuner 42 includes a local oscillator (not shown in the picture) and a mixer for producing an IF signal. As well known in the art, FM frequencies are known to be from 88 MHz to 108 MHz. The FM

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scan tuning receiver further includes an IF level detector 47, level detector and frequency window detector 48, and quality detector circuit 50. Kennedy et al. does not explicitly states a frequency controller, however, from an engineering standpoint, it would have been apparent to one skill in the art that the frequency controller means is in the form of IF level detector 47, level detector and frequency window detector 48, quality detector circuit 50, and the microprocessor controlled PLL scan tuning circuit 57. The foregoing components could be easily implemented on the same IC circuit. The local oscillator obviously sets the frequency to a frequency that differs from the frequency of the received signal by an IF frequency due to the mixer. Kennedy et al. does not show a source of signal, however, Kennedy et al. teaches that circuit 57 receives a start signal 58 in response to operator actuation of a scan tuning operation. Hence, it would have been obvious to one of ordinary skill in the art that a channel selection means is employed in the FM receiver for selecting a channel frequency to start the scanning process.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. U.S. Patent 5,125,105 as applied to claim 14 and further in view of Imazeki U.S. Patent 4,245,348.

Regarding claim 15, Kennedy et al. does not disclose adding first frequency offset value and second frequency offset value when the received frequency is greater than or less than a pre-determined frequency threshold in claim 14. However Imazeki discloses a similar scanning FM receiver that is tuned close to the center frequency of a

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desired frequency when the received frequency is lower or above a frequency threshold. As known in the art, the scanning process increase or decrease the frequency by a frequency interval, that is equivalent to adding or subtracting an offset value. Imazeki further proposes employment of a programmable frequency synthesizer circuit for the local oscillator for tuning the receiver to desired frequencies. Hence, it is reasonably said and it would have been obvious that a microprocessor means could be implemented in Imazeki receiver for programming the programmable frequency synthesizer circuit. Since Kennedy et al. and Imazeki teachings are very similar (e.g. scanning FM receiver) although the implementation is slightly different, therefore, combining both teachings would be apparent to one of ordinary skill in the art.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. The offset values and pre-determined frequency range are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Without properly defining claimed frequency offsets and frequency range, there are cases where the received frequency that is added or

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subtracted by offset values will lie outside the pre-determined range of reception frequency.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitations "said source" and "said local oscillator" in lines 4-7. There is insufficient antecedent basis for the limitations in the claim.

11. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitations "said local oscillator" and "said source" in lines 4-6. There is insufficient antecedent basis for the limitations in the claim.

12. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitations "said local oscillator" and "said source" in lines 4-6. There is insufficient antecedent basis for the limitations in the claim.

Drawings

13. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "*the microprocessor of claim 14*" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Imazeki U.S. Patent 3,794,925 discloses "Frequency-Skipping System for A Signal-Seeking Receiver.

Abe et al. U.S. Patent 6,094,236 discloses "Tuner circuit".

Porambo et al. U.S. Patent 5,280,638 discloses "RF Filter Self-Alignment for Multi-band Radio Receiver".

Matsumoto U.S. Patent 6,373,398 B2 discloses "Automobile Tuner System"

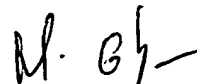
Chong et al. U.S. Patent 6,438,361 B1 discloses "Apparatus and Method for Automatic Selection of Broadband Frequency Channel using Double Frequency Conversion".

Wright, Jr. U.S. Patent 4,748,684 discloses "Fast Tuning Control for a Television System".

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 703-305-2384. The examiner can normally be reached on Tuesday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on 703-306-3034. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.


MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER

KCT
August 14, 2003